

U.S. Patent Application 10/681,484, filed 10/8/03

Reply to Office Action of 11/22/05

REMARKS/ARGUMENTS

In respect to the reference citations in the specification it is noted that they are inclusive of those cited either or both the PTO-892 and the Information Disclosure Statement.

To overcome the objection to the length of the abstract, a revised and condensed version has been proposed that contains less than 150 words.

With regard to line spacing of the claims, as originally filed they were one and one half spaced. However, on the possibility that the Examiner is visually impaired, the claims are now presented in full double spaced format.

Claims 1, 5, 7, 12 and 14 have been corrected by replacing "screw" with "article" to bring correspondence with the use the term "article" throughout these claims. Self-explanatory grammatical corrections have also been made in claims 9 and 10. Claim 14 has been amended to overcome the 35 USC 112 rejection. The added clause (b) is identical to clause (b) in parent claim 12.

Before discussing the specific claims with regard to the rejections under 35 USC 102 and 103 it is thought helpful to briefly describe the present invention and the disclosure of Applicant's earlier Patent No. 5,425,473 ('473) and to address what appears to be a general misunderstanding regarding the terminology describing this invention.

Applicant's Patent No. '473 describes a screw feeder comprising a container having a slotted floor plate (18A) extending along a collating section and a dispensing section that oscillate together about a common axis. Detents or fingers are provided at the slots intermediate the two sections which are engaged when the floor tips downward toward the end of the box remote from the dispensing section (end 14A) to prevent the screws queued in the slots of the dispensing section from moving back to the collating section.

In one embodiment a gate 30 is stationed inside the box intermediate these sections. Gate 30 has a cutout 40 at the bottom margin over each slot in floor 18A so that gate 30 does not impede the flow of screws under gate 30 in either direction when the gate is engaged against plate 18A. Gate 30 is lowered when the floor plate is oscillated to a downward slant toward the dispensing section end of the box (end 14B) for the purpose of preventing loose screws in the collating section from moving into the dispensing section and disrupting the dispensing operation. Gate 30 is raised when the floor moves to an upward slant toward end 14B so that any loose screws that do make it to the dispensing section will move back to the collating section for collating. At the same time, fingers 39 or detent rods 51 are actuated to prevent the queued screws from moving back in the slots to the collating section.

A feeder arrangement such as in Patent '473, where the collating and dispensing sections oscillate together as a unit, may be employed in the present invention. More preferable, however, is the feeder arrangement described in more

detail in the present application having separately oscillating collating and dispensing sections. In either of these embodiment the present invention provides means for selectively opening the box at the upstream end (end distant from the dispensing section) so that the box may tilted downward at the upstream end while the upstream end is open to permit the articles in the box to be removed therefrom.

From the Action there appears to be a misunderstanding regarding the forgoing, perhaps stemming from the fact that in the oscillation cycle the slotted floor of the collating section at either end slants alternatively upward and downward from the other end. However, the relative vertical positions of the ends of the floor at any given time do not characterize or establish the direction of flow of screws to be dispensed by the box.

As describe in the specification and claims the screws flow along the slots in the collator section toward the dispensing section where they continue in that direction to the escapement mechanism where they are dispensed one by one. The screws are prevented from flowing backward to collator end of the box, in the case of boxes having a single continuous floor for both the collator and dispenser sections as described in Patent No. '473, by the pins or detents intermediate the collator and dispenser sections. In the case of the more preferred embodiment as described in the present application, where the collator and dispenser sections are separately articulated so that the dispenser section during operation always slopes

downward in the direction away from its junction with the collator section, that downward slope prevents back flow to the collator section.

To characterize this flow direction Applicant in the specification and claims has used the term “downstream” to indicate the direction of flow of the screws to be dispensed. This is consistent with and should be clear from the dictionary definition of downstream as the direction of current or flow. See particularly claims 1, 5 and 12, each at paragraph a, where the flow of articles is indicated to be downstream to the dispensing section.

A little reflection should illuminate this. When the box oscillates downward in the upstream (collator) direction, the loose screws and any remaining queued screws in the collator section will move toward the upstream end. But the queued screws in the dispensing section will only move back no farther than the location of the detents or pins. Thus the overall flow of screws will be in the dispenser section direction. Otherwise, the feeder would simply not feed screws.

By the same logic, the downstream direction in the Patent No. '473 feeder is in the dispenser direction and therefore the feeder box does not have an opening means at the opposed (upstream) end as called for in the present application. Thus, the 35 USC 102 rejection of claims 1 through 8 cannot stand.

In respect to the 35 USC 103 rejection, the mischaracterization of the up and downstream directions is repeated here. Beyond that it is suggested that gate 30 (not 20) of Patent '473, which is inside of the box and does not communicate with the outside, some how renders obvious the placement of an opening with a gate to

the outside of the box. In the first place, as described above, gate 30 has cut outs 40 that permit screws in the slot pass under even when it is down. Thus, it is always open to screw flow upstream (direction away from the dispensing section). But, in any case, when screws flow in either direction they are still in the box. The rejection seems to suggest that the screws of the Patent '473 feeder are somehow collectively "removed" from the box. This is simply not the case. If it is meant by this that they removed at the escapement at the dispensing end, this results only in time consuming one by one dispensing of the screws in the operation of the dispenser. That is not the solution of the present application, that is the problem. Patent '473 does not even suggest the problem, much less its solution by provision of opening means at the other (upstream) end of the box. With the patent disclosure, the operator must still climb up, open the box and reach in and laboriously remove all of the random screws and all of the slotted screws by hand.

Finally, while an attempt has been made to specifically address this rejection, it is simply not understood and not seen to have any merit. Thus, if it is maintained, clarification is solicited.

All of the remaining claims subordinate to claims 1, 5 and 12 and should be found allowable along with those claims simply on the basis that they incorporate all the elements of those claims add more specificity to those elements. However, a number these claims will be discussed for the record as they have particularly strong basis for patentability beyond the subject matter of claims 1, 5 and 12.

Claims 9-11 and 16-18, in varying degrees of specificity, are directed to a feature regarding an article detaining means operating at an intermediate location along tracks that normally prevents queued articles from moving back upstream when the tracks are tilted downward in the upstream direction. In this feature the detaining means is made selectively operable and inoperable so that it may be rendered inoperable when the tracks are tilted downward in the upstream direction for removal of articles from the feeder. This feature is neither addressed nor suggested in Patent '473.

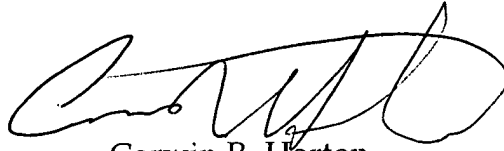
Claims 14 and 15, with varying specificity, is directed to a feature relating to the embodiment of this invention described in detail in this application. In this embodiment the dispensing section oscillates separately from the collating section, rotating from a position with the downstream end tilted upward and a position with the downstream end tilted downward. The dispensing section remains tilted downwardly for the duration of the feeding operation so that articles arriving into the dispenser tracks from the collating section move by gravity toward that downstream end of the dispenser section. In this configuration the articles thus queued in the dispensing section cannot move back to the collator section when that section tilts downwardly in the upstream direction. However, during changeover of articles, the dispensing section may be tilted upwardly at the downstream end so that the queued articles therein can move back along the tracks to the collator tracks and from there out of the box at the upstream end. The Patent '473 disclosure suggests nothing concerning a collating section moving separately

from a dispensing section nor of a dispensing section that may tilted downward for dispensing and upward for removal of articles.

Claim 19 relates to another feature of the invention involving the separately oscillating collating and dispensing section embodiment having an article removal capability as described above for claims 14 and 15. In this feature a regulatory gate is provided at the intersection between the collating section tracks and the dispensing section tracks. This gate normally is in closed position to restrict movement to the dispensing section of articles not properly moving from the collating slots to the dispensing slots. Means are provided to open this gate when the dispensing section is tilted to its upward position during changeover of article types. Thus the gate may fulfill its gating function without impeding flow of articles, during changeover, back through the intersection of the sections and then further upstream out of the upstream end of the box. This feature is, of course, totally foreign to the disclosure of Patent '473.

In sum, Patent '473 does not describe or suggest any means for removal of screws from the collator end of the box. Indeed, it does not even reveal or suggest the problem solved by the present invention. Applicant respectfully requests that a timely Notice of Allowance be issued in this case.

Respectfully submitted,



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Dated: February 17, 2006